

FIG.1

DESCRIPTION OF 4-BIT  
GRAY CODE

DECIMAL CODE	BINARY CODE ADR<3~0>				GRAY CODE GADR<3~0>				• CARRY
	<3>	<2>	<1>	<0>	<3>	<2>	<1>	<0>	
0	0	0	0	0	0	0	0	0	
1	0	0	0	1	0	0	0	1	
2	0	0	1	0	0	0	1	1	
3	0	0	1	1	0	0	1	0	
4	0	1	0	0	0	1	1	0	
5	0	1	0	1	0	1	1	1	
6	0	1	1	0	0	1	0	1	
7	0	1	1	1	0	1	0	0	
8	1	0	0	0	1	1	0	0	
9	1	0	0	1	1	1	0	1	
10	1	0	1	0	1	1	1	1	
11	1	0	1	1	1	1	1	0	
12	1	1	0	0	1	0	1	0	
13	1	1	0	1	1	0	1	1	
14	1	1	1	0	1	0	0	1	
15	1	1	1	1	1	0	0	0	

DOWNWARD  
DIRECTION

UPWARD  
DIRECTION

FIG.2

EXPRESSION CONVERTING 4-BIT GRAY CODE INTO 4-BIT BINARY CODE

BINARY CODE ADR<3~0>		GRAY CODE GADR<3~0>
ADR<3>	=	GADR<3>
ADR<2>	=	Exor(GADR<3>,GADR<2>)
ADR<1>	=	Exor(GADR<3>~GADR<1>)
ADR<0>	=	Exor(GADR<3>~GADR<0>)

FIG.3

EXPRESSION CONVERTING N-BIT GRAY CODE INTO N-BIT BINARY CODE

BINARY CODE ADR<n-1~0>		GRAY CODE GADR<n-1~0>
ADR<n-1>	=	GADR<n-1>
ADR<n-2>	=	Exor(GADR<n-1>,GADR<n-2>)
ADR<n-3>	=	Exor(GADR<n-1>~GADR<n-3>)
⋮	⋮	⋮
ADR<0>	=	Exor(GADR<n-1>~GADR<0>)

FIG.4

EXEMPLARY LOCATION OF CARRY OF 4-BIT GRAY CODE

DECIMAL CODE	BINARY CODE	GRAY CODE	
5	0 1 0 1	0 1 1 1	
6	0 1 ① ②	0 1 0 1	DOWNWARD
7	0 1 1 1	0 1 0 0	UPWARD

FIG. 5

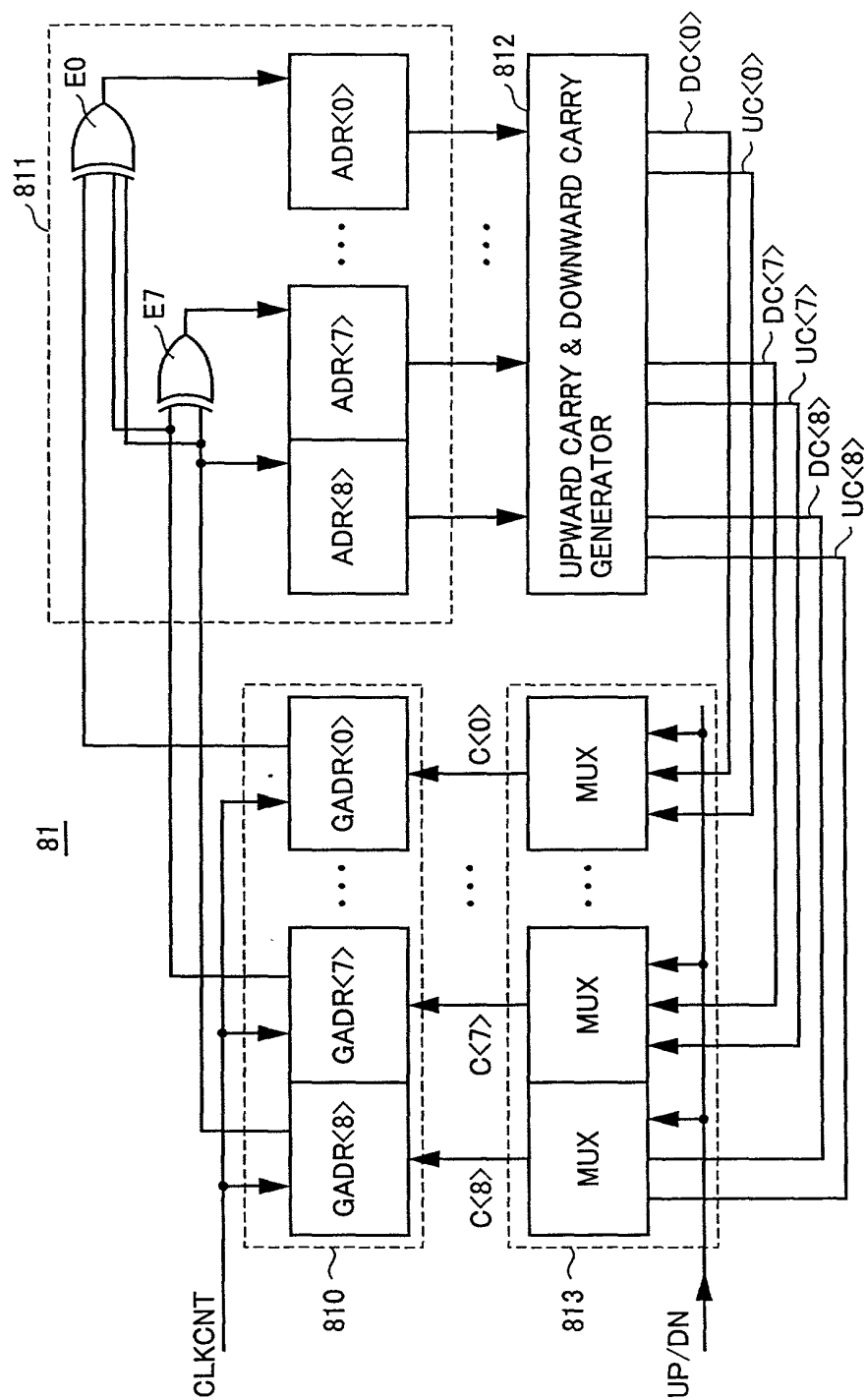


FIG.6

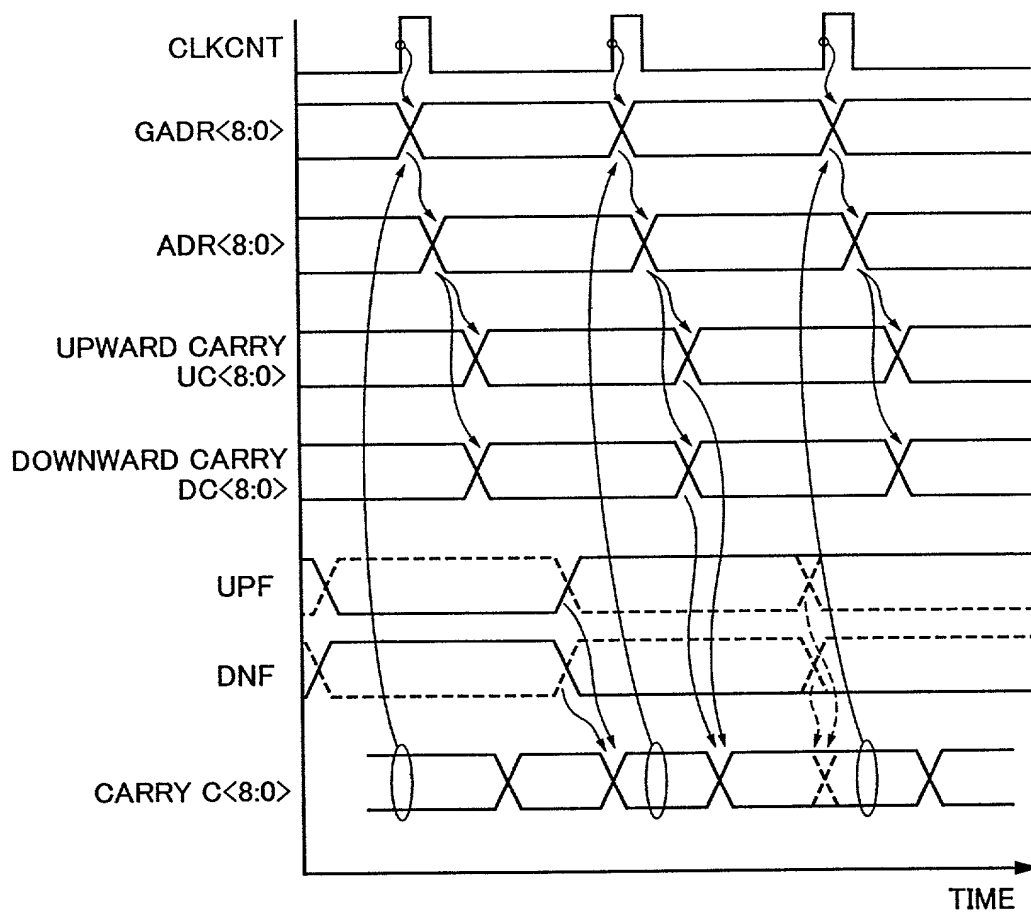


FIG. 7

FIG.7

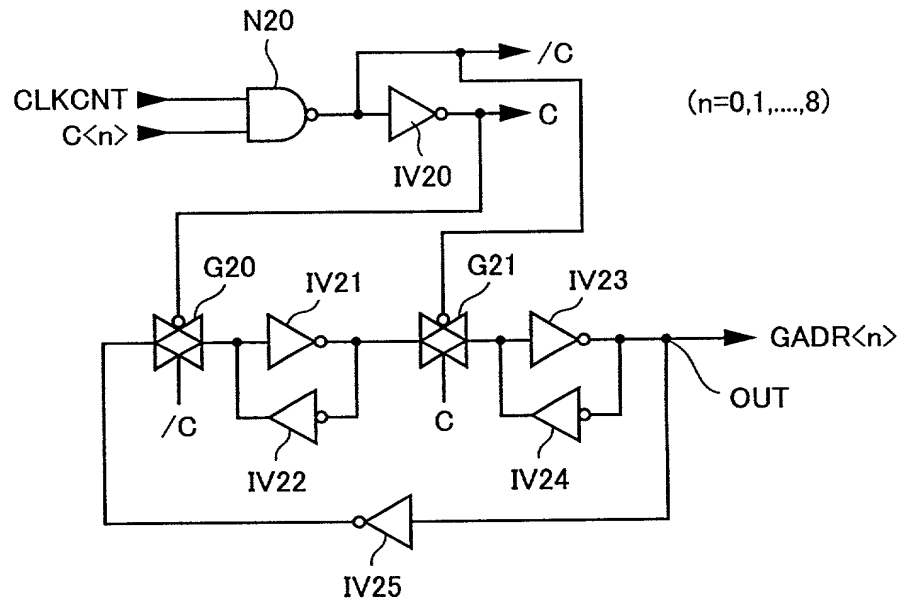


FIG.8

811

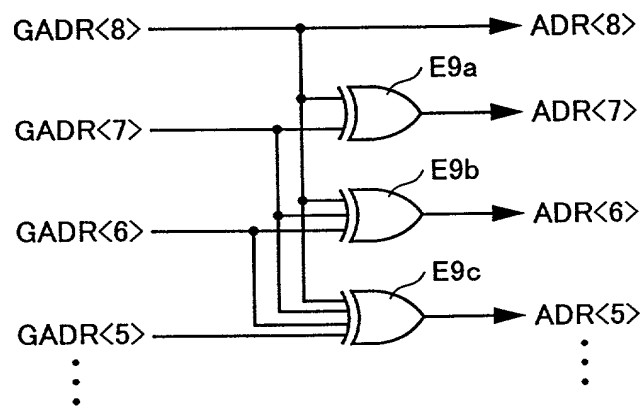


FIG. 9

1000

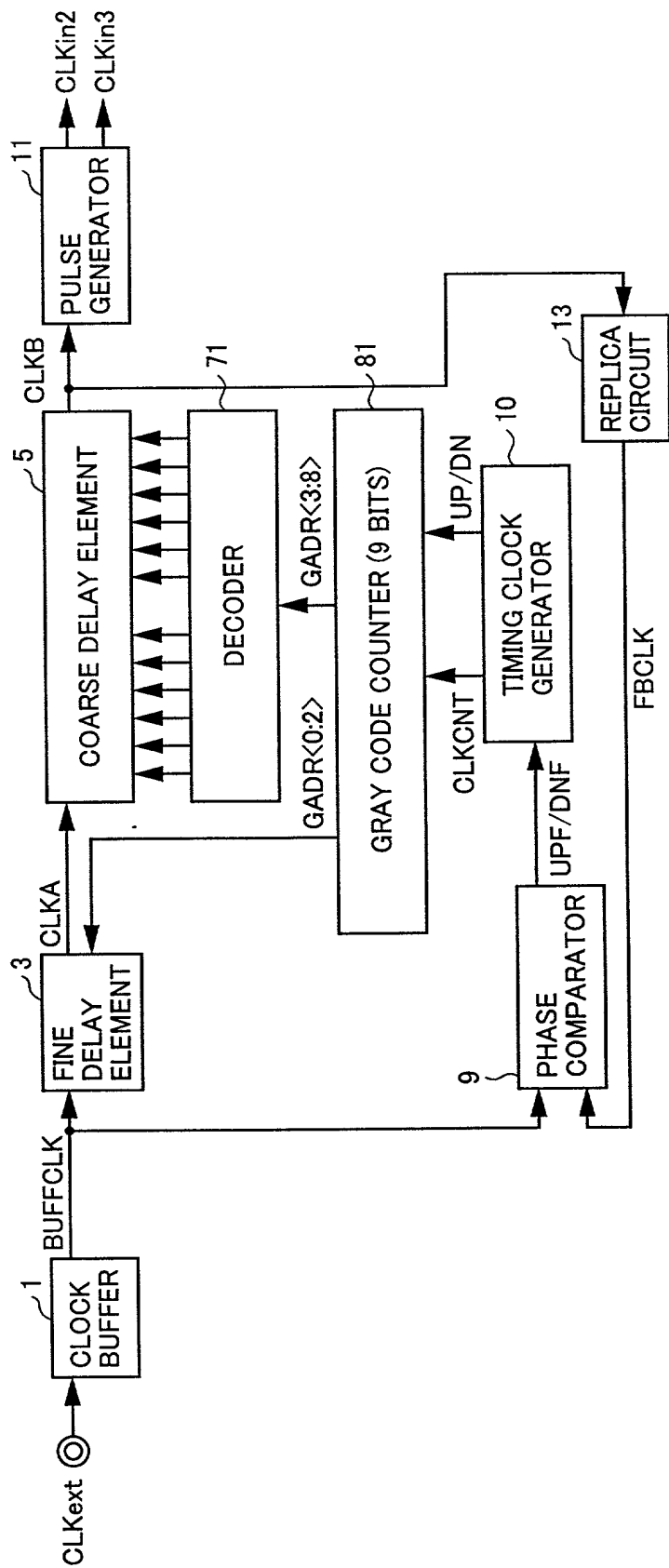


FIG.10

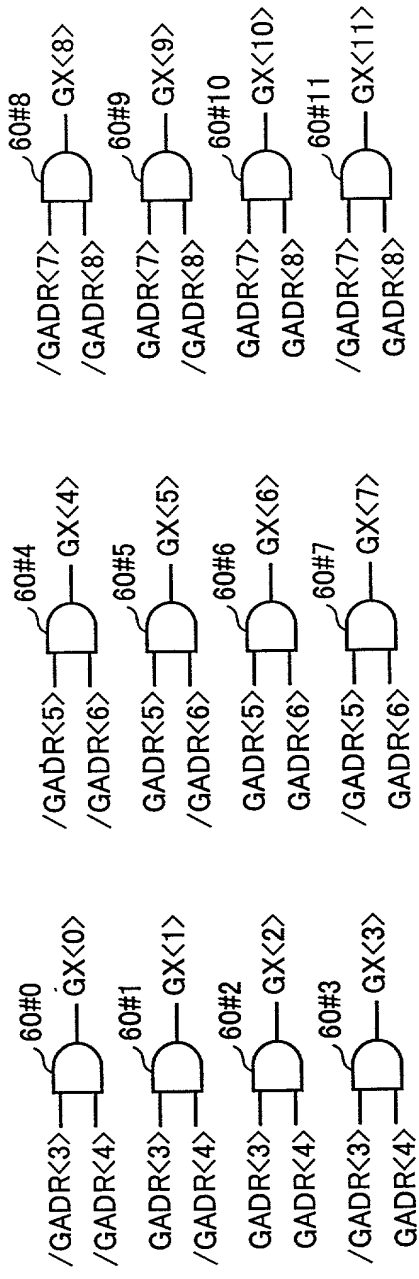


FIG.11

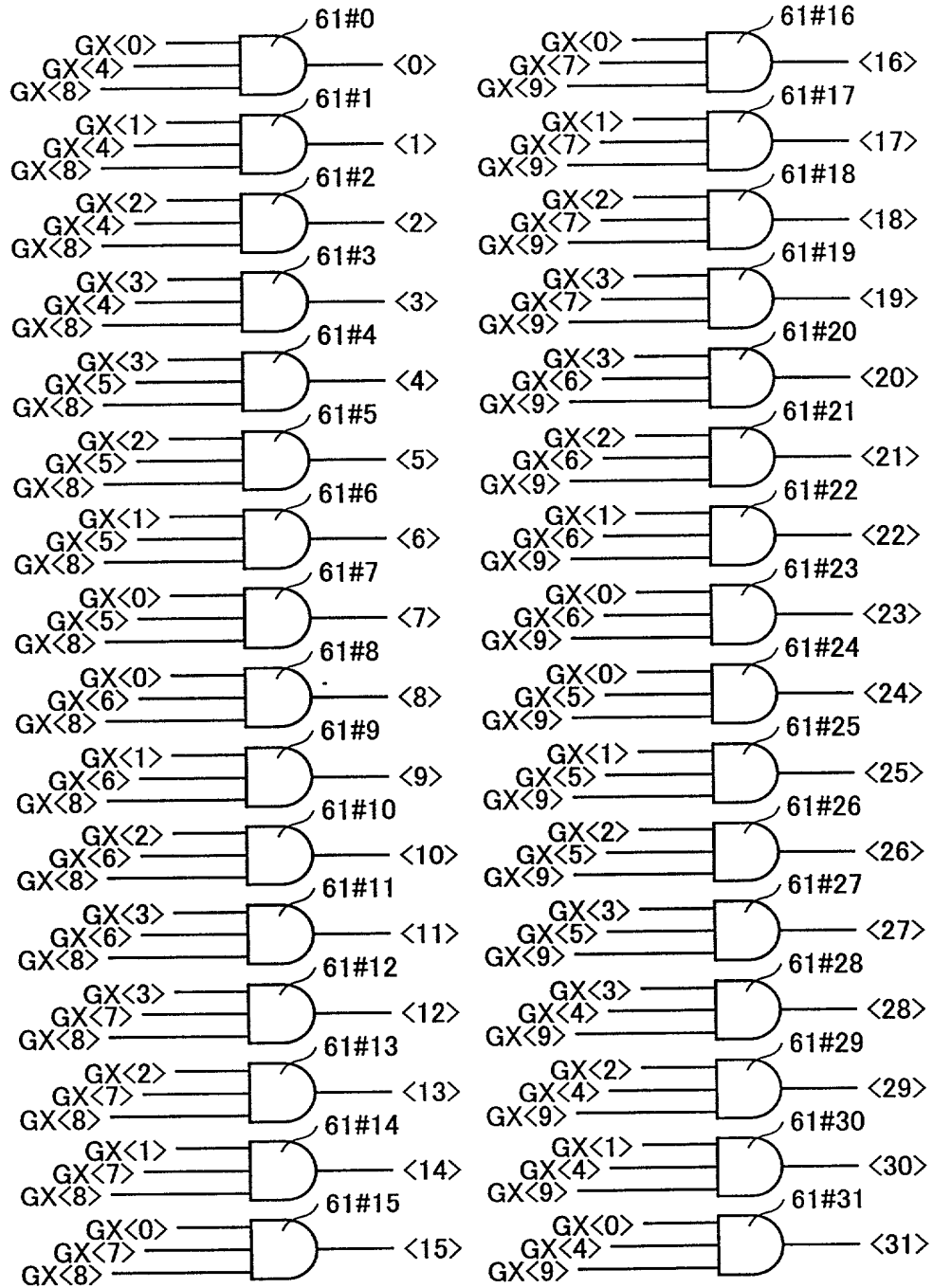




FIG.12

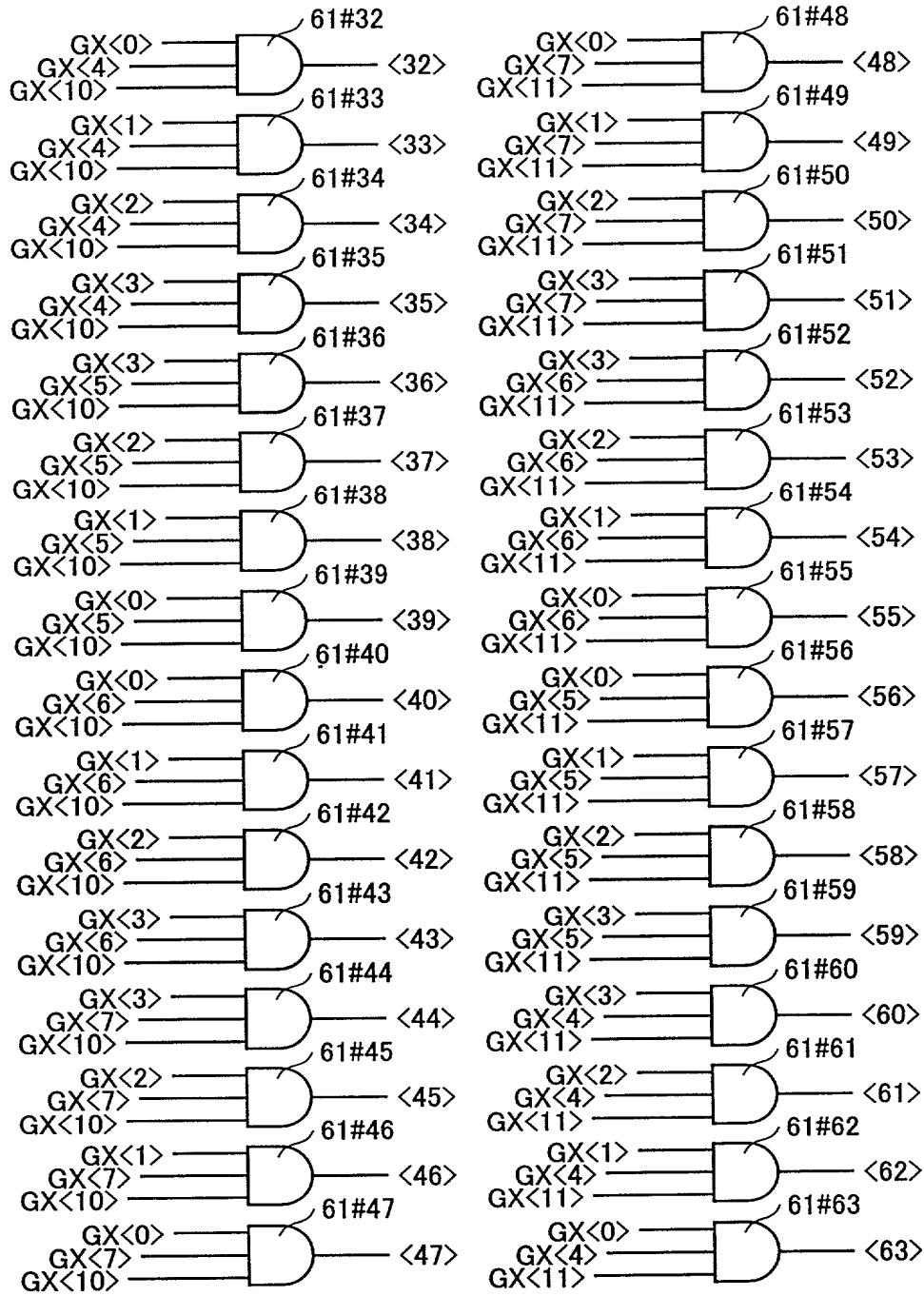


FIG. 13

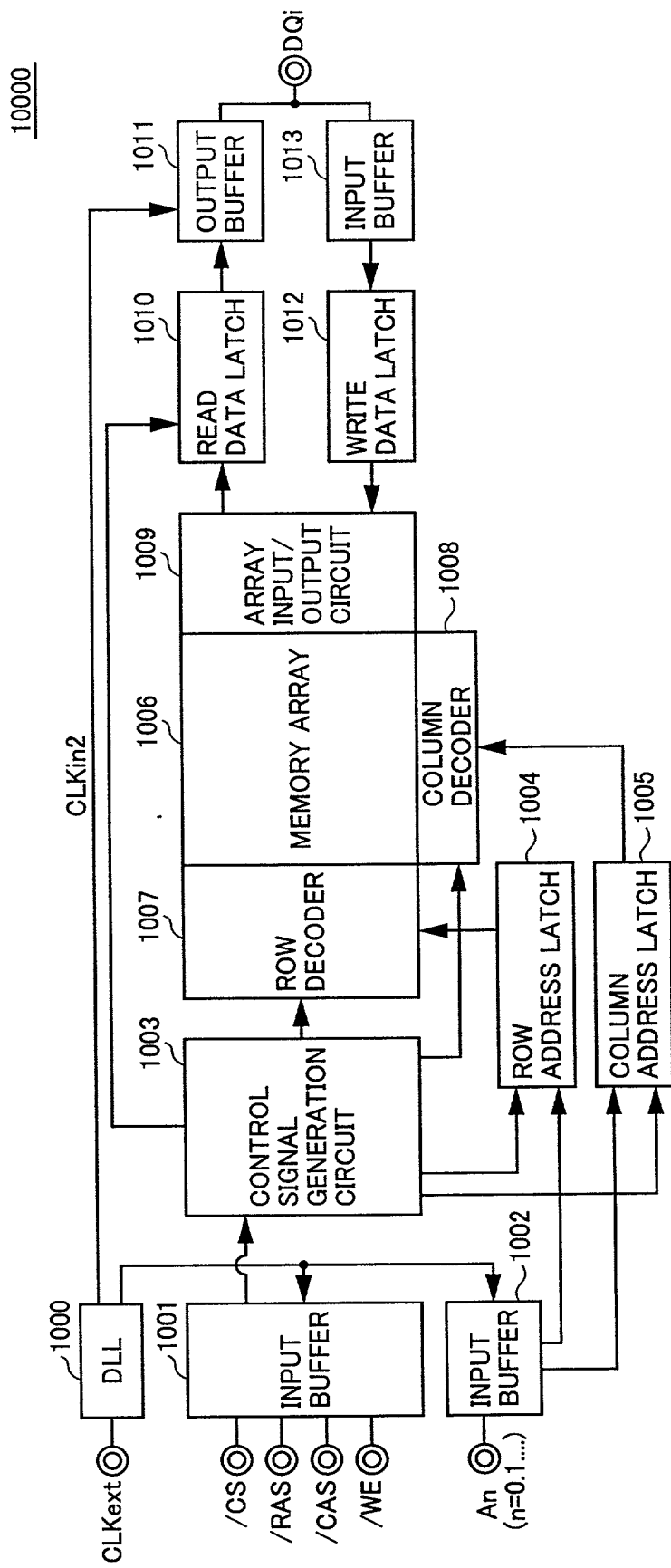


FIG. 14

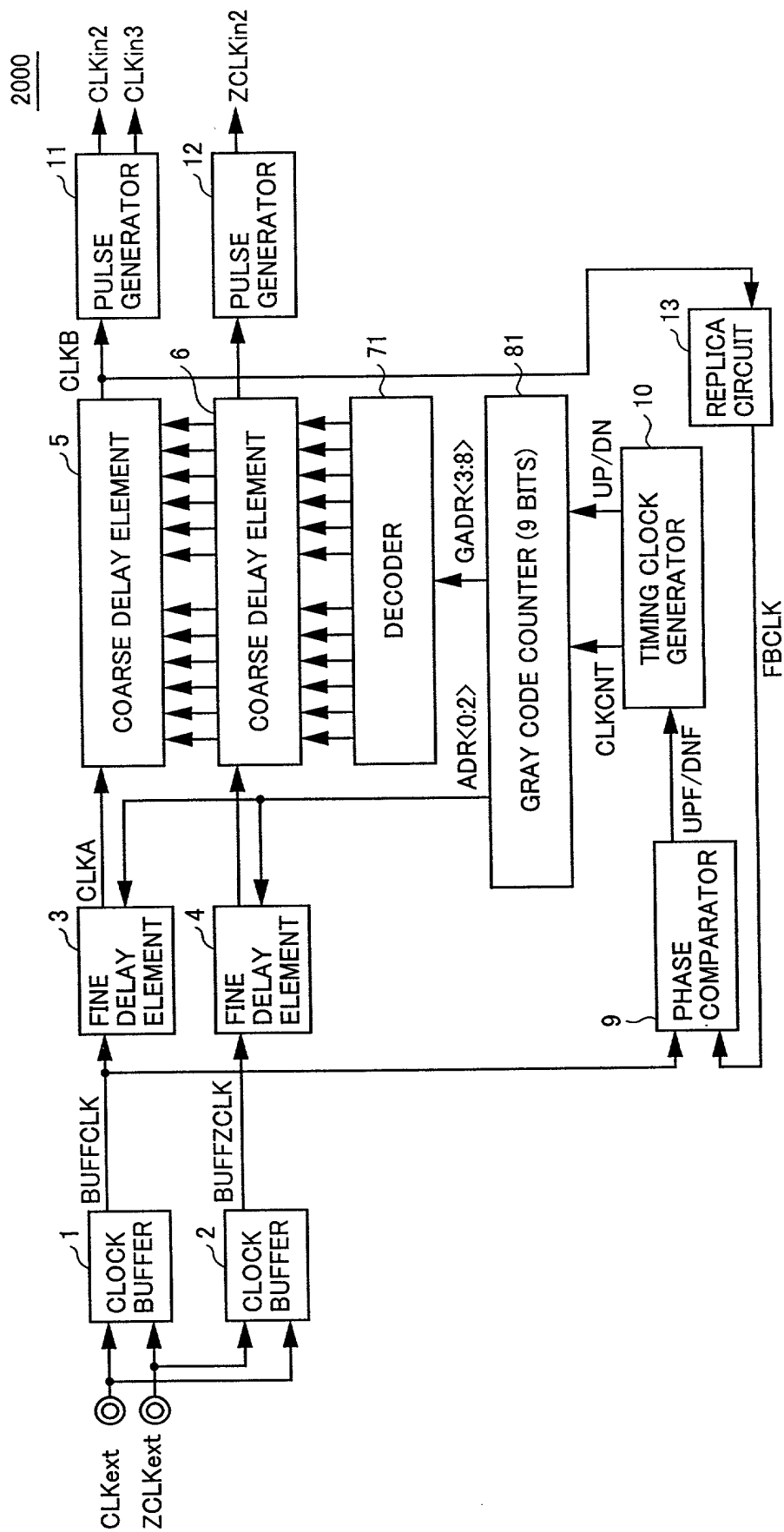


FIG.15

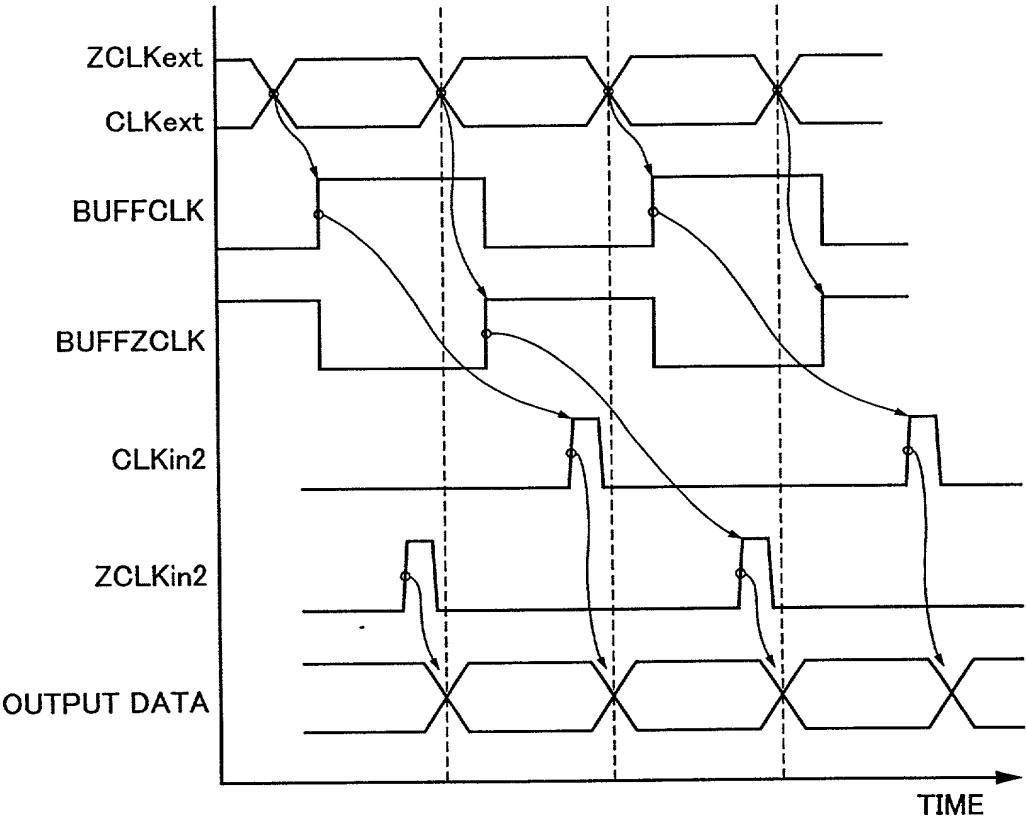


FIG. 16

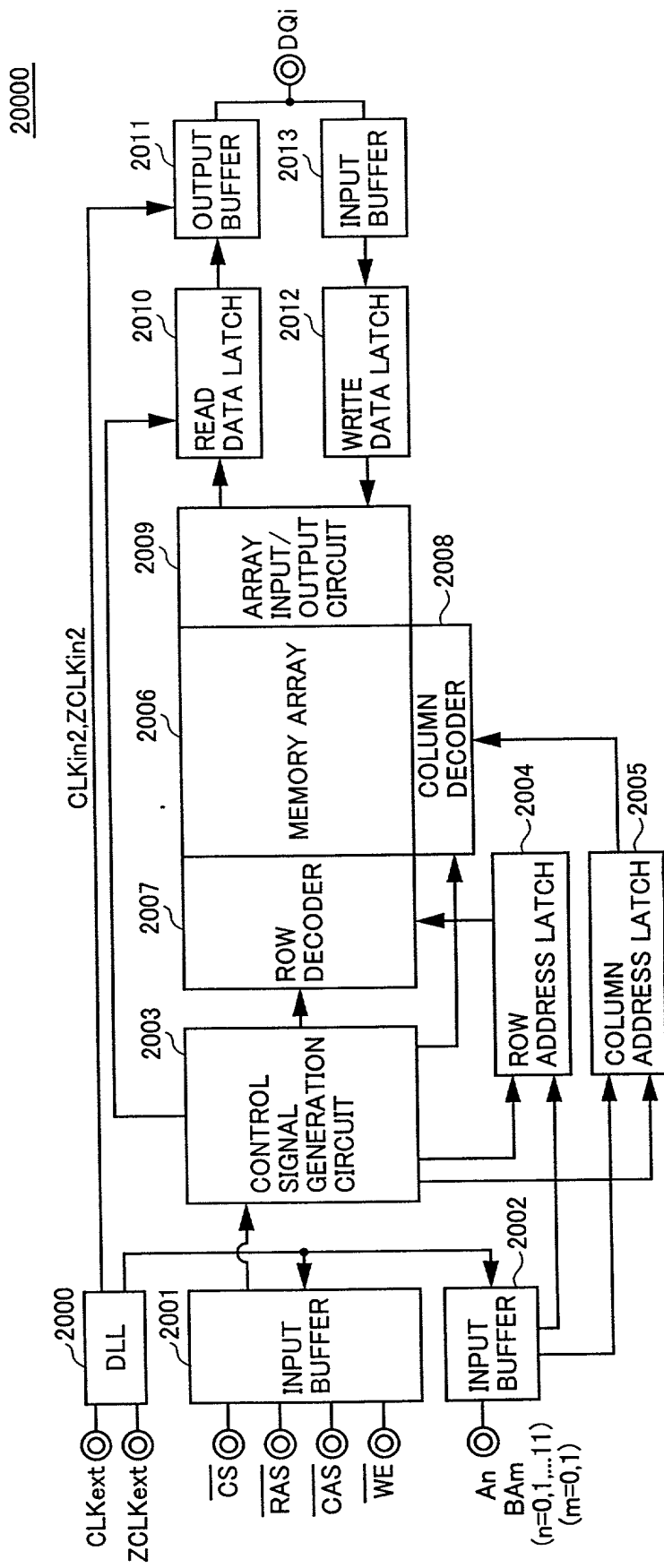
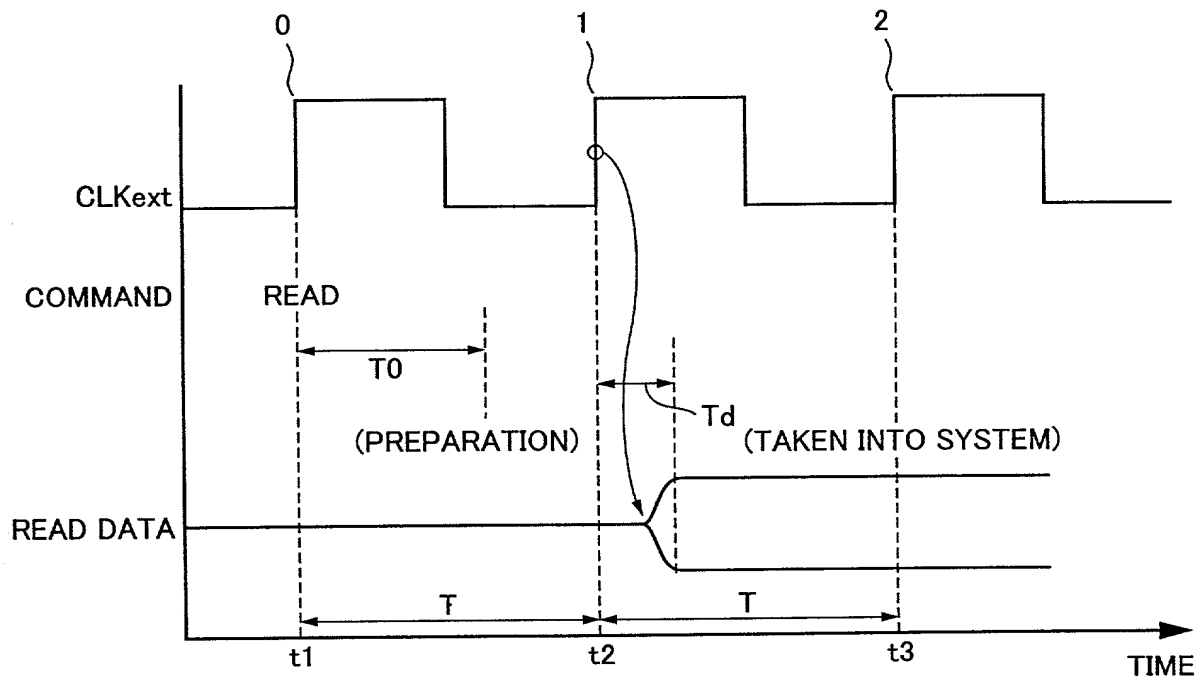


FIG.17 PRIOR ART



09877027.064104  
"011190" 2072860

FIG.18 PRIOR ART

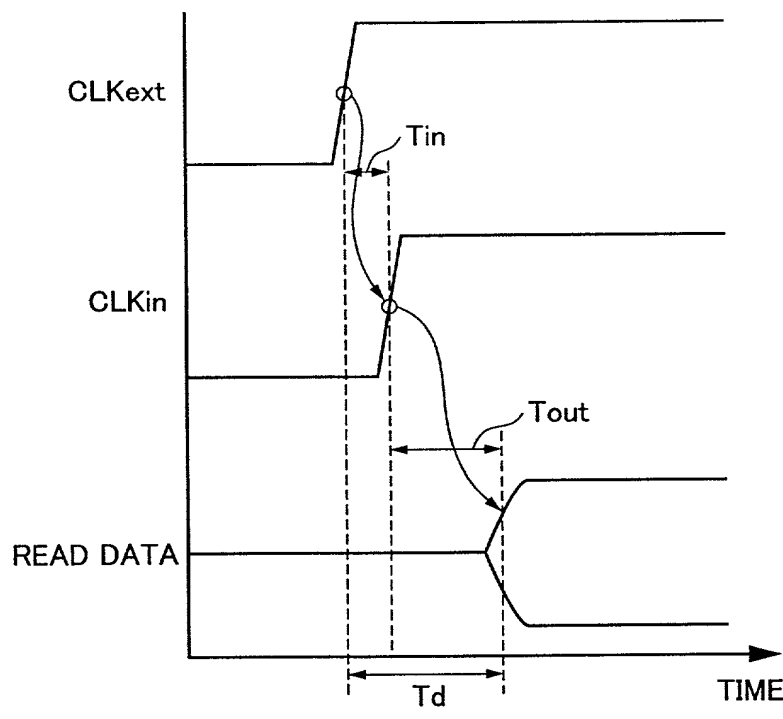
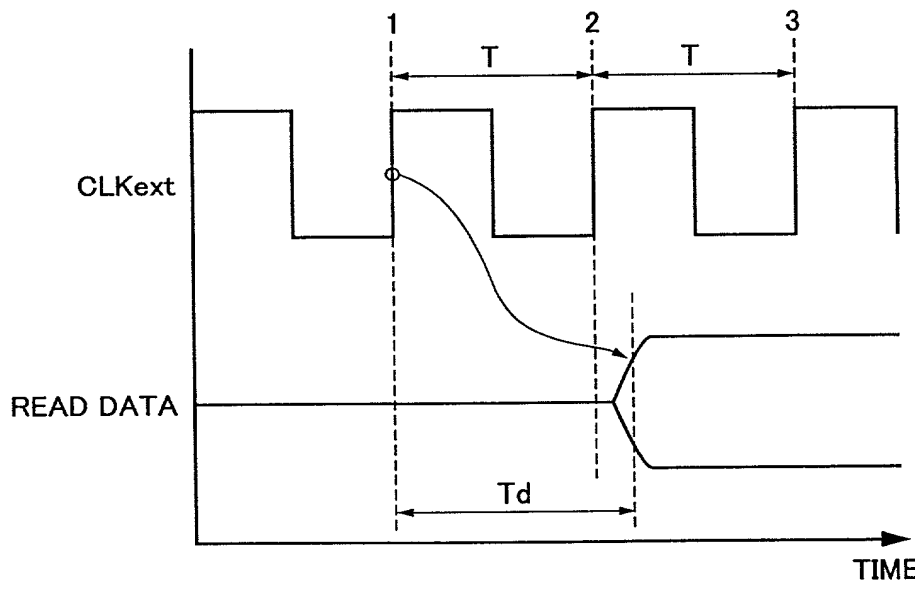


FIG.19 PRIOR ART



0987627.064101  
TOP SECRET 20/860

FIG.20 PRIOR ART

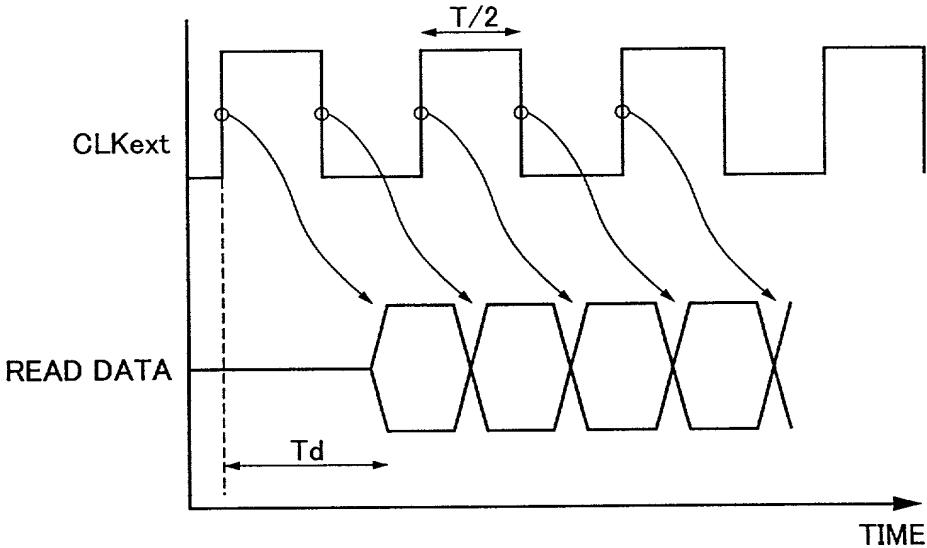


FIG.21 PRIOR ART

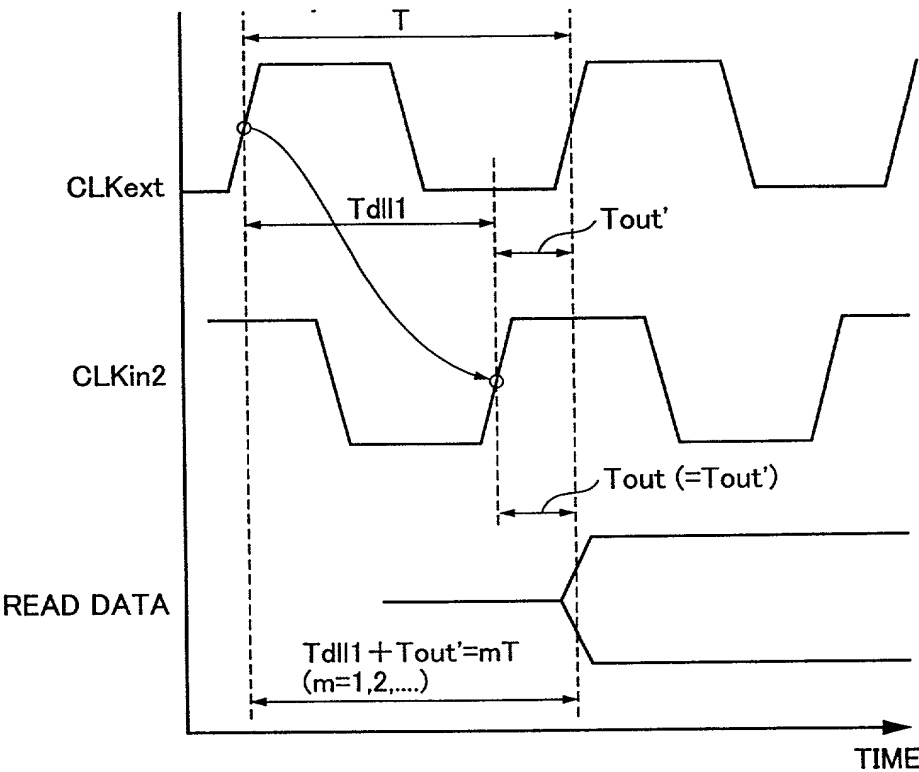




FIG.22 PRIOR ART

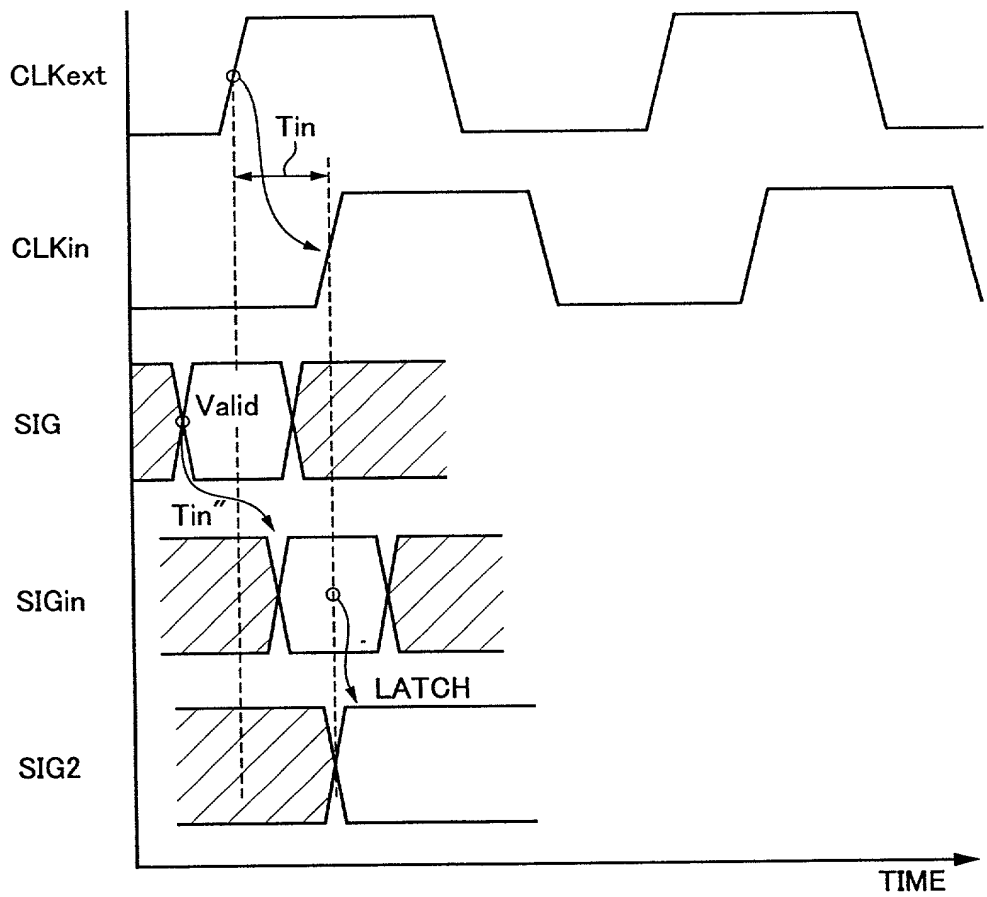


FIG.23 PRIOR ART

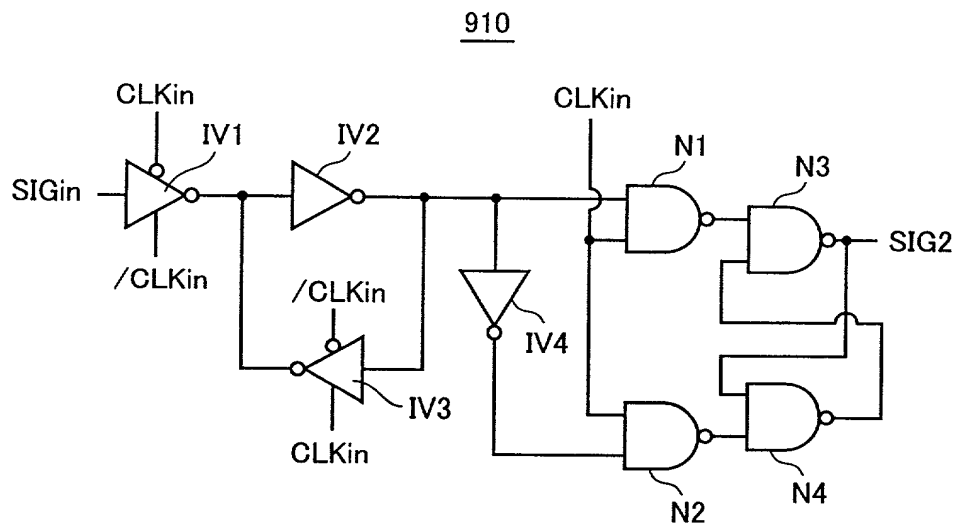


FIG.24 PRIOR ART

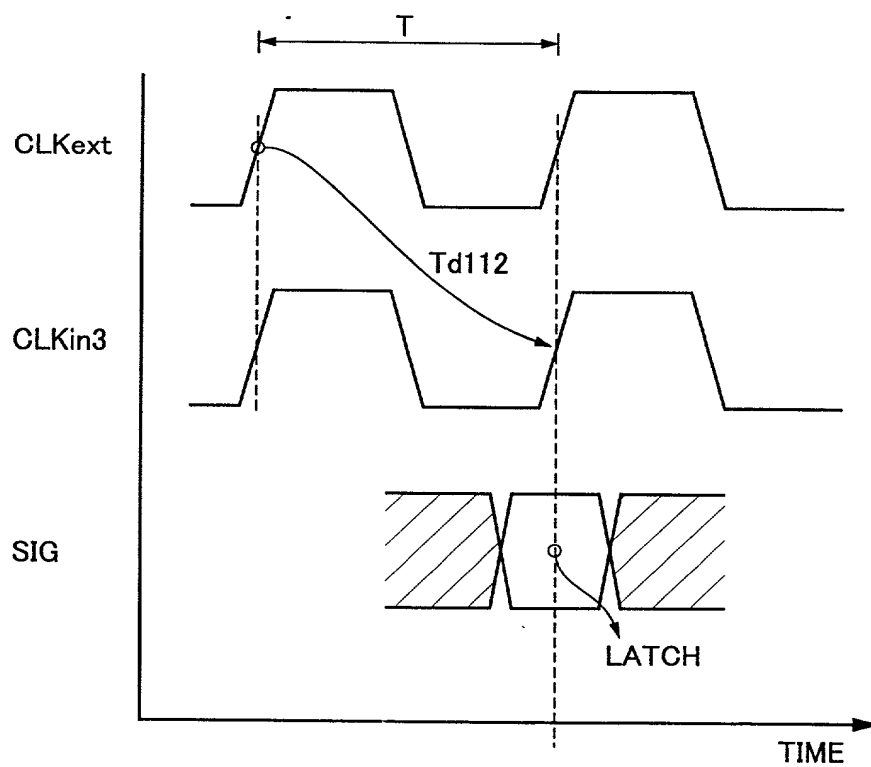
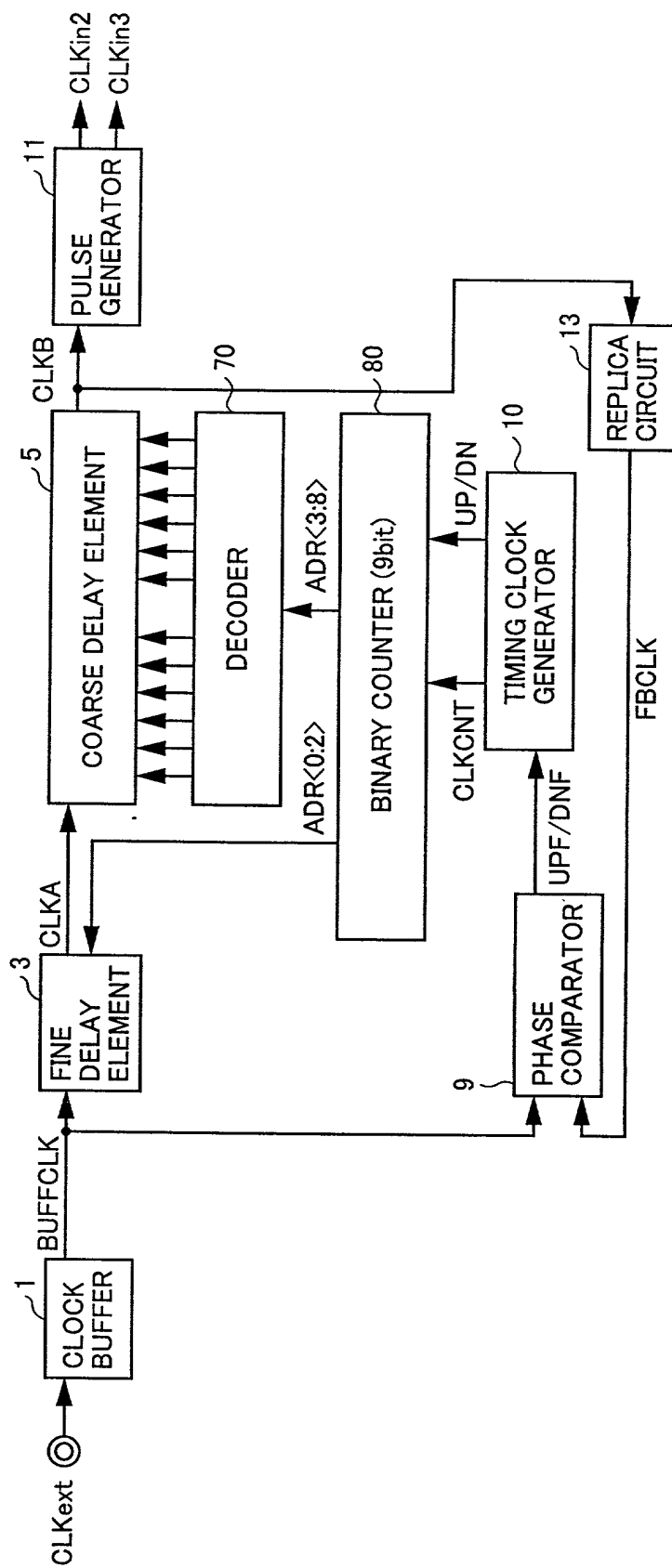


FIG.25 PRIOR ART

9000



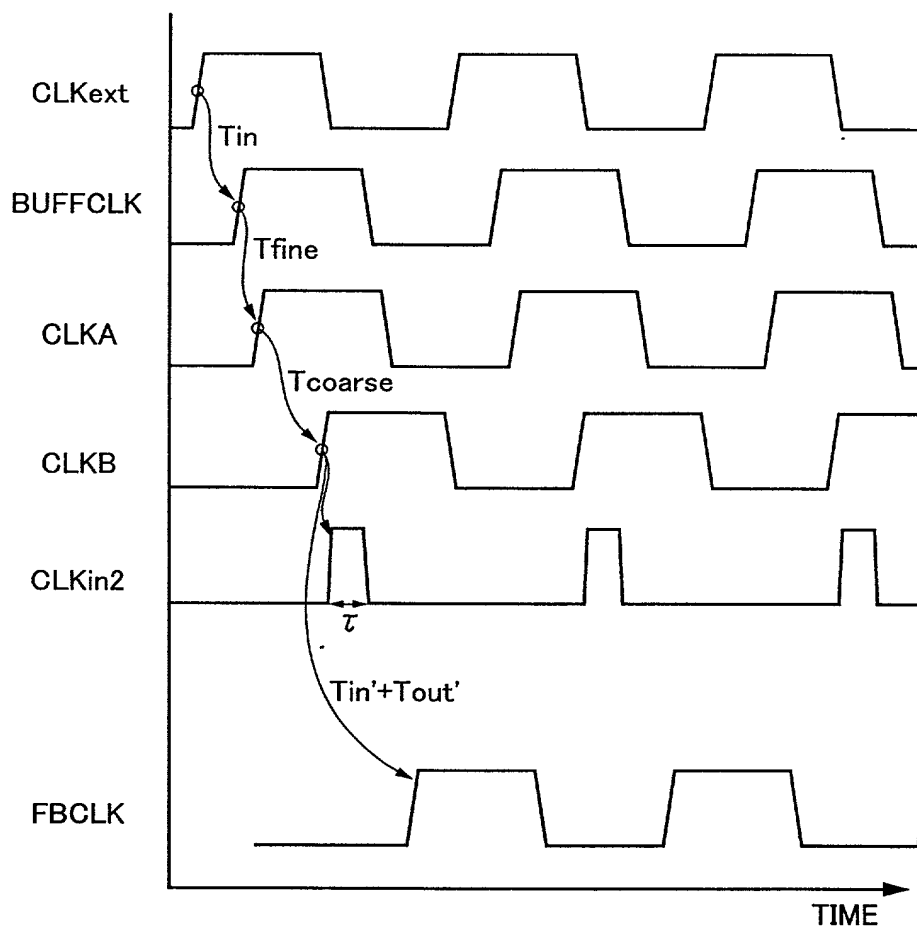


FIG.27 PRIOR ART

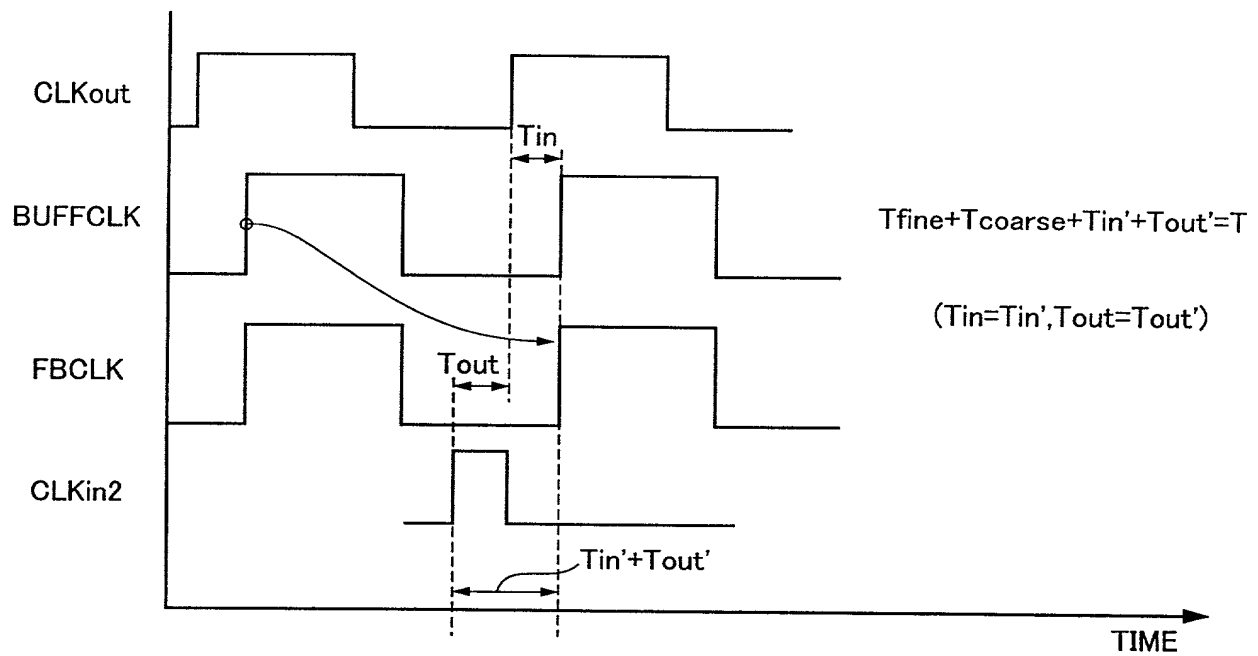


FIG.28A PRIOR ART  
UP (UPF="H",DNF="L")

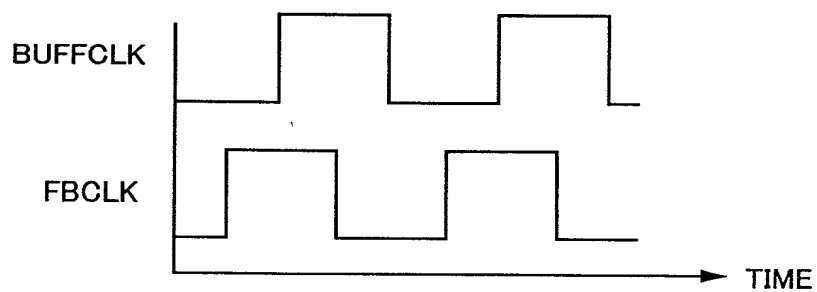


FIG.28B PRIOR ART  
DOWN (DNF="H",UPF="L")

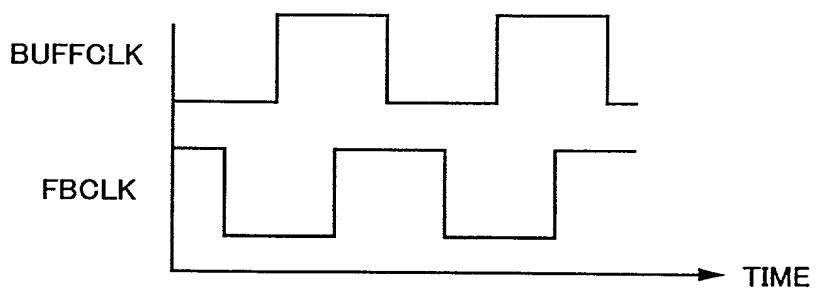


FIG.29 PRIOR ART

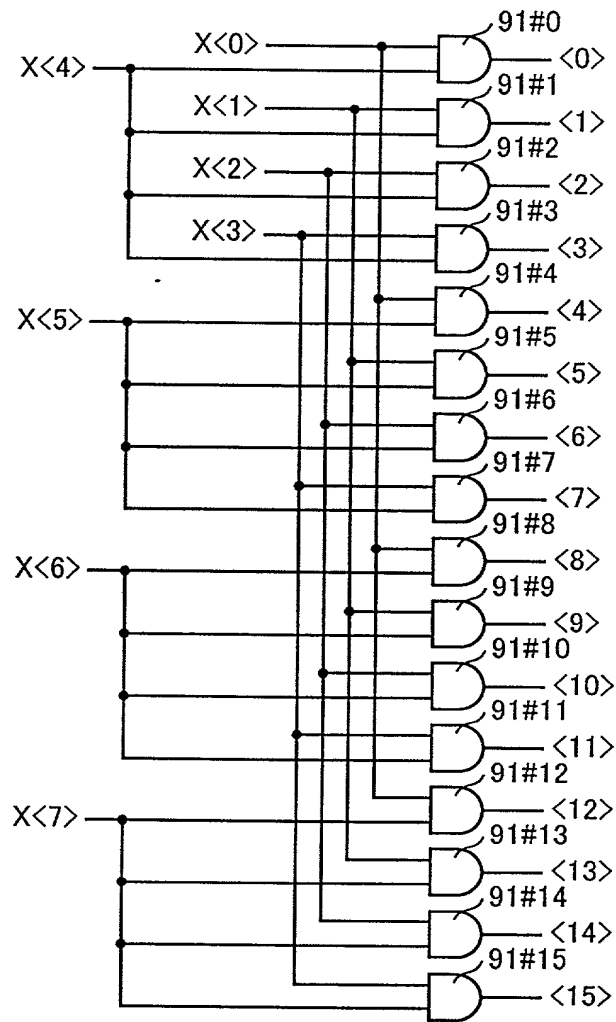
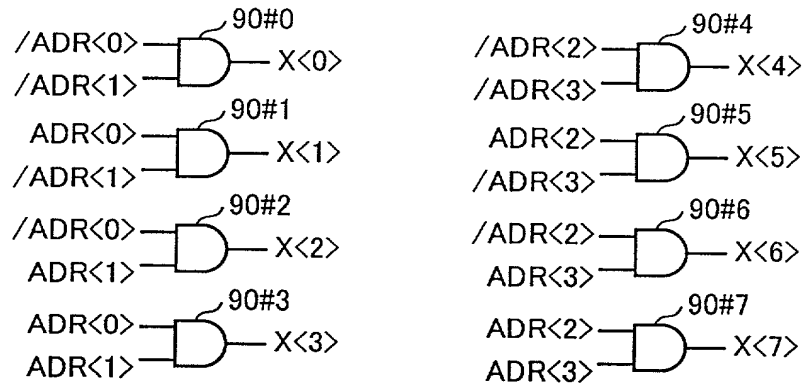


FIG.30 PRIOR ART

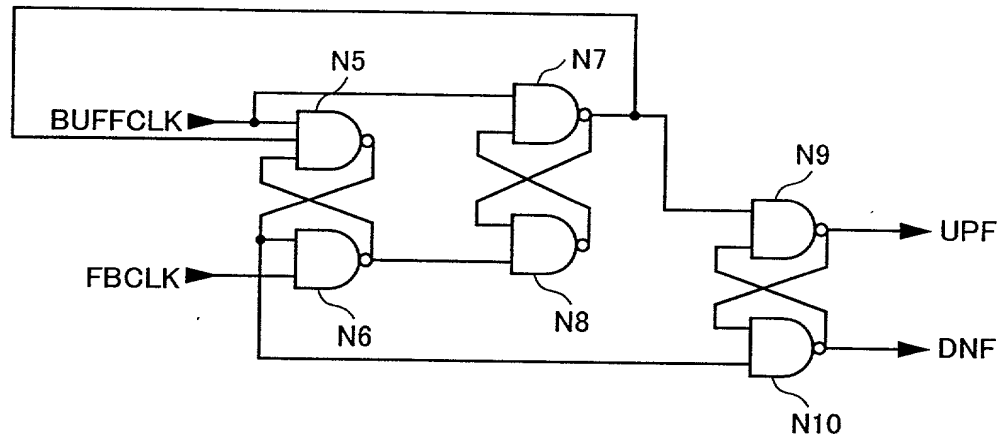


FIG.31

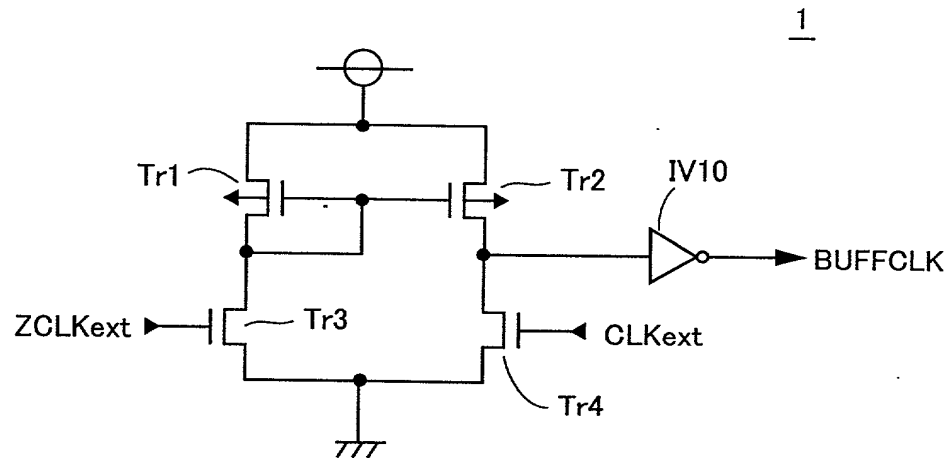


FIG.32

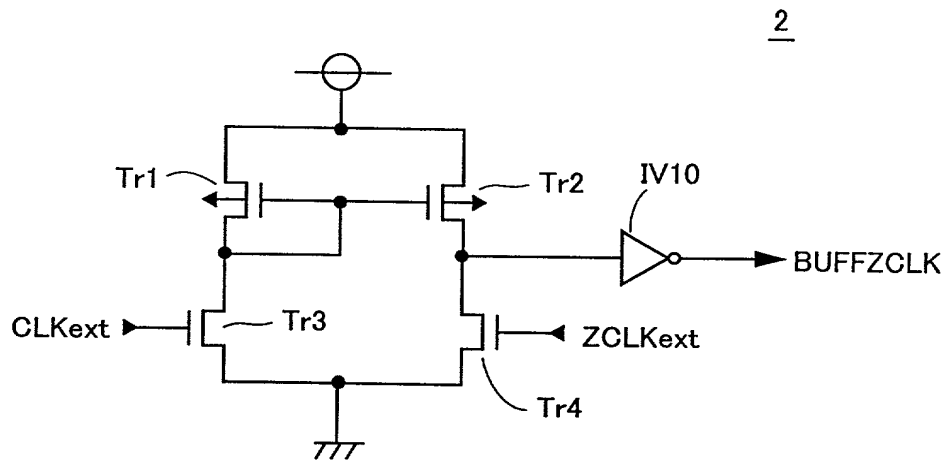
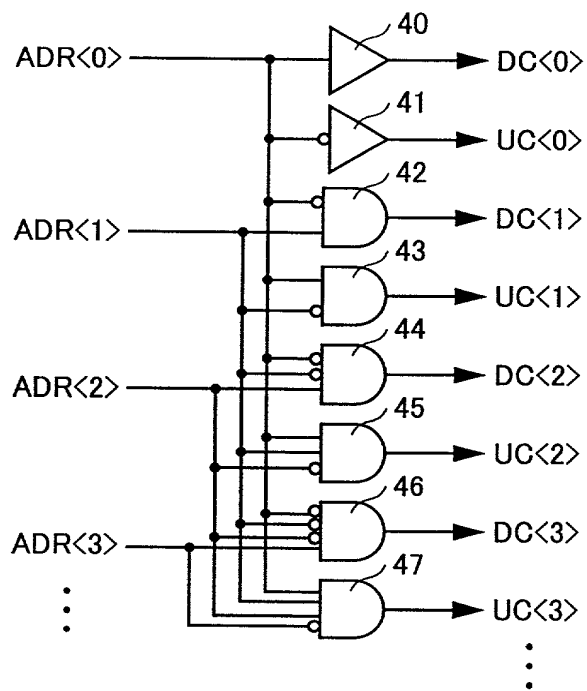


FIG.33



812

FIG.34

